TEXTILE TECHNOLOGY DIGEST

VOLUME 13 JANUARY, 1956 NUMBER 1

ABSTRACTS

Col. 1 Col. 2

FIBERS A

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W. T. Astbury (University of Leeds). *Ann. Sci. Textiles Belges. No. 3:* 22-44 (September, 1955); *in English.*

Lecture presented at the Congrès International de la Recherche Scientifique Appliquée à l'Industrie Textile.

Second-order transition temperature and fiber properties.

A. Brown (Carbide and Carbon Chemicals Co.). *Textile Research J. 25:* 891-901 (November, 1955).

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The author discusses water conditions, temperature, plant population, insect damage and disease as major factors in fiber development.

Some economic considerations in storing seed cotton at gins.

J. E. Ross, Jr. Wash., U.S. Agricultural Marketing Service, 1955. 28 p. Marketing research report No. 87. Available from Superintendent of Documents, Washington 25, D. C. 20¢.

Theory of fiber extraction. Chapter 3. The structure of fibers.

J. G. Thieme. *Textile Quart. 5:* 160-167 (July-September, 1955).

A note on the hemicelluloses of some bast fibers.

A. K. Mazumdar *(Letter to the editor). J. Sci. and Ind. Research (India) 14B:* 542-544 (October, 1955).

Problems relating to flax retting and fiber quality.

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Investigations on flax problems carried out in Oregon.

Correlation of the physical properties of jute yarn with the chemical characteristics of the fiber.

S. B. Bandyopadhyay and S. K. Mukhopadhyay (Indian Central Jute Committee). *(Letter to the editor). Textile Research J. 25:* 967-968 (November, 1955).

Oxidation of wool by inorganic peracids.

C. Earland, T. P. MacRae and G. J. Weston (Technical College, Bradford, England). *Textile Research J. 25:* 963-965 (November, 1955).

14 references.

The sorption of HCl by textile fibers. Part 2. Sorption by modified wool fibers and other fibers.

P. Larose (National Research Council, Ottawa, Canada). *Textile Research J. 25:* 956-961 (November, 1955).

In a previous paper the author reported the results of some experiments in which the sorption of hydrogen chloride by wool was measured under various conditions of temperature and pressure. The present paper gives the results of similar experiments carried out with modified wools and with other fibers in an attempt to throw more light on the process of sorption. 8 references.

Penetration of alkaline solutions into wool fibers determined by changes in the rigidity modulus.

M. Karrholm, G. Nordhammar and O. Friberg. *Textile Research J. 25:* 922-929 (November, 1955).

An apparatus is described for determination of the torsional rigidity and rigidity modulus of textile fibers. The apparatus is a modification of the torsion pendulum and is especially suitable for determination of changes in torsional moduli, e.g.,

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after some treatment. Tests have been made on wool fibers subjected to treatments with either potassium hydroxide in ethanol or sodium hydroxide in butanol kerosene. In the first case the rigidity modulus decreased about 10% on account of the treatment, while no change occurred in the second case. The rigidity modulus is a much more sensitive indicator of changes in the outer parts of the fiber than is Young's modulus. 6 references.

The protective action of wool wax and suint against the photolysis of wool.

E. V. Truter and F. P. Woodford (Leeds University). *J. Textile Inst. 46:* T641-T652 (October, 1955).

Wool wax is shown to be ineffective in protecting wool against damage due to light, if it is applied in amounts representative of those found in normal fleeces. Abnormally thick layers do protect, by excluding oxygen and/or water vapor rather than by absorbing light-energy. Suint, deposited on wool samples in amounts typical of heavily suinted fleeces, does protect the wool. The important factor here is unknown. The possible bearing of these effects on the well-being of the fleece is briefly discussed. 18 references.

MAN-MADE FIBERS A 2

Aromatics in fibers and films.

G. P. Hoff and J. L. Martin (E. I. du Pont de Nemours and Co., Inc.) *Ind. Eng. Chem. 47:* 2122-2125 (October, 1955).

Markets for fibers and films are discussed. Synthetic fibers from aromatic chemicals currently enter into fibers making up only 3 to 3.5% of total U. S. fiber demand. Spectacular estimates for future growth of fibers are discounted. Based on analysis of limited markets, price, and characteristics, total man-made fibers are expected to grow from 25 to 30% of the U. S. fiber market by the early 1960's. Aromatic chemicals supply only a small part of the film business, but are expected to participate substantially in future growth. 5 references.

Micromorphology of synthetic fibers.

J. Isings. *Ann. Sci. Textiles Belges. No. 3:* 189-195 (September, 1955); *in English.*

With the aid of the polarizing microscope it is possible to prove that in synthetic fibers differences in the value of birefringence occur. 6 references.

Synthetic and regenerated brush filling materials.

F. Kidd. *Fibres 16:* 375-379 (November, 1955).

The article reviews man-made brush-filling materials, their physical and chemical properties and the different uses for which they are suited. 21 references.

Development, properties and merchandising of Arnel triacetate.

A. F. Tesi. *Modern Textiles Mag. 36:* 72-75, 83 (December, 1955).

Engineering of Arnel fabrics.

J. L. Barach. *Modern Textiles Mag. 36:* 76-77, 83 (December, 1955).

Dyeing, finishing and heat treatment of Arnel.

F. Fortess. *Modern Textiles Mag. 36:* 78-83 (December, 1955).

Terylene fiber and the woolen industry.

J. Booth. *Can. Textile J. 72:* 41-48 (December 2, 1955).

Physical and chemical properties, processing, finishing, and uses.

YARN PRODUCTION B

Cotton waste industry. Part 3. Hard wastes—treatment and uses.

Platts Bull. 8, No. 11: 359-367 (1955).

How one mill traces bad work.

F. G. Ernest. *Textile Ind. 119:* 96-98 (December, 1955).

Using the evenness tester to detect sources of uneven yarn, concentrating on card sliver, drawing sliver, and roving.

Processing du Pont nylon staple on the worsted system.

E. I. du Pont de Nemours and Co., Inc. Wilmington, November, 1955. 11 p. Technical Information Bulletin N-32.

CARDING AND COMBING B 2

Some general considerations in wool carding.

G. H. Thorndike (Wool Industries Research Assoc.). *J. Textile Inst. 46:* P692-P698 (October, 1955)

Empirical and fundamental approaches.

Jute carding practice and associated problems. Chapter 4. Mechanics of carding and discussion of carding factors.

C. M. Watson. *Textile Quart. 5:* 168-175 (July-September, 1955).

New continuous card stripper.

American Balmes Corp. *Am. Textile Reptr. 69:* 35, 45 (December 1, 1955).

This vacuum cleaning device traverses above the lickerin and removes 5 per cent of the fibers from the cylinder. Minimum stripping is required once every 40 hours.

The new technique in combing. Part 3.

Platts Bull. 8, No. 11: 353-358 (1955).

Part 3 covers in greater detail the work leading up to the adoption of 2 over 2 drafting at the comber draw-box and at the drawing frames subsequent to combing. Further information is given on such practical matters as roller settings and roller weighting.

Relationship between combining waste percentage and some properties of cotton fibers.

Koninklijke Stoomweverij te Nijverdal N. V. *Tex. 14, No. 8:* 1078-1080 (1955); *in Dutch.* Through *BCIRA 35:* 700 (1955).

The relationship between waste percentage and some fiber properties (upper half mean, and mean length and uniformity ratio, measured by means of the Fibrograph; Micronaire index and Causticaire maturity, measured by the Micronaire) was determined by varying the waste percentage at the comber and measuring these properties in the combed sliver and in the comber waste. In normal preparation (card, sliver-lap, ribbon-lap, comber) the fiber length properties showed a higher correlation with the waste percentage than the surface properties; in the modified process (card, two-passage draw-frame, sliver-lap comber), the Micronaire index and Causticaire maturity had a more significant correlation with waste percentage than the fiber length properties. Practically the same results were obtained with various cottons. These findings confirm a theory of W. L. Balls, that the combing mechanism is also influenced by fiber properties other than fiber length, e.g. fiber parallelism. In the modified combing method as proposed by Platt (card, 3-passage draw-frame, lap-former, comber) the reversal of the fiber direction together with increased parallelism of the fibers are responsible for the smaller waste percentage, and the criterion for the waste percentage is shifted from the length- to the surface-properties of the fiber. The Platt experiments were made exclusively with Egyptian and Sudan cottons; different preparation may, therefore, be necessary for other cottons.

Some research aspects of wool combing.

R. Bownass (Wool Industries Research Association). *Ann. Sci. Textiles Belges. No. 3:* 211-225 (September, 1955); *in English.*

Preliminary research investigations into wool combing are discussed. Test methods for fiber length, fiber fineness, vegetable matter, and nep count are described and suitable equipment is indicated. The problems of fiber breakage, nep formation, and burr removal are examined. 4 references.

James Noble—1853-1953.

A. G. Peel. *J. Textile Inst. 46:* P688-P691 (October, 1955).

A tribute to James Noble, inventor of the Noble comb.

SPINNING, WINDING, TWISTING B 4

Converting to large package spinning.

H. Burnham (Saco-Lowell Shops). *Textile Bull. 81:* 76-79 (November, 1955).

Modifications for large package conversion.

Large package spinning changeovers.

W. H. Rawlinson (Whitin Machine Works). *Textile Bull. 81:* 73-76 (November, 1955).

Modifications for large package conversion.

Must yarn breakage frequency increase with increasing spindle speed?

W. Wegener and R. Peuker. *Textil-Praxis 10, No. 8:* 800-801 (1955); *in German.* Through *BCIRA 35:* 700 (1955).

Experiments have shown that the yarn-breakage frequency first increases with increasing spindle speed, reaching a maximum at 6,640 r.p.m., and then decreases in spite of further increase (minimum at 7.110 r.p.m.). The experimental results reported (including data referring to the dynamometric properties of the yarn) are only valid for the yarn and machine tested. Since no experiments were carried out on other machines and materials under various conditions, it is not yet possible to generalize the findings.

Observations on worsted spinning.

S. Kershaw. *J. Textile Inst. 46:* P681-P687 (October, 1955).

Developments in methods and machinery.

Features and adaptability of the woolen ringframe. Part 6.

J. A. B. Mitchell. *Textile Mfr. 81:* 568-570 (November, 1955).

The twister tubes.

Spinning of rayon staple fiber. The irregularity of laps, slivers, rovings and yarns.

H. Locher. *Rayonne et Fibres Synthet. 11, No. 8:* 1297-1309 (1955); *in French.* Through

BCIRA 35: 701 (1955).

In this article, the author deals with variations in the irregularity and the irregularity index of rayon staple fibers during spinning, and uses the variance-length curves and spectrograms for studying the effect of yarn irregularity on the appearance of fabrics. The irregularity of draw-frame slivers appears to be responsible for the thickness variations in the yarn; therefore, in order to obtain more even slivers, a considerable change in the construction of draw-frames is considered necessary. Some entirely new machines are already on the market.

Balloon control. Part 4. Refinements of the theory. Part 5. Application of the theory.

P. F. Grishin. *Platts Bull. 8, No. 11:* 333-352 (1955).

Part 4 deals with refinements of the theory developed in Parts 1-3. This theory was subjected to continuous check by direct experiments. Part 5 presents results in both tabular and graphical form and shows the relationships between the maximum permissible spindle speed, the lift and the spinning ring diameter for both small and large diameter control ring systems. The figures given were obtained from theoretical calculations, laboratory tests and small scale mill trials.

Theory and practice of flax spinning. Part 2. Machinery and equipment. Chapter 15. Winding (continued).

A. V. Pringle. *Textile Quart. 5:* 190-194, 202 (July-September, 1955).

Control of yarn tension.

Walter Kidde. *Textile Recorder 73:* 74, 77 (December, 1955).

Developments in yarn tension control methods and a description of the applications of the Kidde yarn compensator.

On the characteristics of yarn tension devices. Part 2.

J. A. Kalkman. *Enka Breda Rayon Rev. (English ed.) 8:* 2-27 (November, 1955).
See *TTD 11:* 243 (June, 1954)

YARNS B 5

Behavior of yarns subject to impact loading.

I. J. Gruntfest (Rohm and Haas Co.). *(Letter to the editor). Textile Research J. 25:* 966-967 (November, 1955).

Calcium alginate yarn.

S. Ilgner. *Textil-Praxis 10, No. 8:* 807-810 (1955); *in German.* Through *BCIRA 35:* 697 (1955).

Preparation, properties and uses of alginate yarns are briefly reviewed and directions are given for the sizing of alginate warps (100/40 and 150/60 den.) and the dissolution of calcium alginate filaments.

Products and problems of filament bulking.

L. W. Rainard. *Can. Textile J. 82:* 45-47 (August 26, 1955).

Ban-Lon is discussed in relationship to the general field of bulked filament yarns.

A study of blended woolen structures. Part 2. Blend distribution in some wool-nylon and wool-viscose yarns.

M. J. Coplan and M. G. Bloch (Fabric Research Laboratories). *Textile Research J. 25:* 902-922 (November, 1955).

13 references.

Analysis of irregularities in cotton yarn.

S. Firrao. *Riv. Tessile 10, No. 5:* 539-545; *No. 7:* 811-816 (1955); *in Italian.* Through *BCIRA 35:* 717 (1955).

In this review the author systematically examines two categories of factors causing yarn irregularities: (1) those depending upon processing and (2) those due to mechanical machine defects. Brief reference is also made to some special forms of irregularities caused by immaturity of the cotton, presence of small neps and faulty carding. 41 references.

Dynamics of fibers and yarn.

G. Gadefelt. *Medd. Svenska Textilforskningsinst. No. 52:* 1-20 (1955); *in Swedish.* Through *BCIRA 35:* 717 (1955).

The dynamics of fibers and yarn is studied and an empirical investigation is made into the role of frictional forces in the manufacturing processes.

Removal of neps from yarn.

S. Padmanabhan. *Indian Textile J. 65:* 733-736, 720 (September, 1955).

Reducing neps in yarn processing.

FABRIC PRODUCTION C

WARPING, SLASHING, YARN PREPARATION C 1

Experiments in the sizing of spun rayon warps.

H. W. Best-Gordon and S. D. Weaver. *Man-Made Textiles 32:* 47-49 (November, 1955).

A study of the effect of different systems of spinning and sizing, and of different counts of yarn and various warp densities, on the shedding of fluff.

Homogenizers in warp size preparation.

W. A. Hewitt. *Textile Bull. 81:* 79-85 (November, 1955).

Brief description of fundamentals is followed by discussion.

WEAVING C 2

Predetermining yards of woven cloth.

Textile World 105: 133 (December, 1955).

A formula and chart are presented that give the yards of cloth expected from the looms at any given efficiency or speed and on any style of cloth.

Can you weave a smaller sample?

B. L. Whittier. *Modern Textiles Mag. 36:* 44, 105 (December, 1955).

How the Fabric Development Department at the School of Textiles, North Carolina State College, produced a 1/2 yard sample of fabric on a commercial power loom with a total of 2-3/4 ounces (about 1/6 lb.) of yarn available for both warp and filling requirements.

Control of weft and shuttle during the weaving cycle.

J. Starkie. *Textile Mfr. 81:* 575-578 (November, 1955).

Technical discussion with diagrams.

Weft tension in weaving.

M. W. H. Townsend (Wool Industries Research Assoc.). *J. Textile Inst. 46:* P699-P712 (October, 1955).

Changes of weft tension that occur when yarn is pulled from the shuttle in the loom.

Weaving defects. Part 7.

C. O. Cronic. *Textile Ind. 119:* 94-95 (December, 1955).

Crooked selvages, singling in filling, bad start-up after pick-out, slack warp ends (creepers), and double warp threads.

Stain-free weaving.

Bancroft Engineers (Preston) Ltd. *Textile Wkly. 55:* 1616 (November 18, 1955).

A "no-oil" picker spindle is described.

Study of weaving mechanisms with modified stroboscope. Part 2.

D. C. Snowden and P. Melchior. *Man-Made Textiles 32:* 52-57 (November, 1955).

Experiments in connection with the bending of the picking stick, the movement of the pawls and shield in a warp let-off motion, and the effect of picker-spindle adjustments on the shuttle's flght. 4 references.

Jute and linen weaving. Part 2. Chapter 12. Cloth taking-up motions (continued).

T. Woodhouse and T. Milne. *Textile Quart. 5:* 195-202 (July-September, 1955).

Continuous motions used in new weaving machine.

Anthony Cartagine. *Daily News Record No. 241:* 30, 32 (December 12, 1955).

A weaving machine which replaces the reciprocating motions commonly found in weaving equipment with continuous motions is in its final stages of development at Construcciones Mecanicas Cerdans, S. A., Barcelona, Spain. The mechanism is described and illustrated.

Fabric design on the automatic loom. Part 1.

A. L. M. Bayoumi. *Textile Recorder 73:* 62-64 (December, 1955).

The first of a series of articles which will show the full capabilities of different types of automatic loom in fabric designing.. The articles will include descriptions of typical motions on a large range of modern automatic looms.

The Schonherr buckskin loom. Part 3.

A. Lang. *Textil-Praxis 10, No. 9:* 910-915 (1955); *in German.* Through *BCIRA 35:* 736 (1955).

In this part the author discusses the development and adjustment of temples, ratchet gearing, take-up motions, and the mechanism and adjustment of positive take-up motions, and gives some examples for calculating the weft density.

KNITTING C 3

Tricot production calculations.

F. Schmidt (Regent Knitting Mills Ltd). *Textile World 105:* 129, 200 (December, 1955).

Five formulas are given to figure the amount of yarn required for each order, the time required to knit the order, and the pieces that can be knitted from the yarn stock.

FABRICS C 4

Blends of rayon-cotton for work clothing. Part 1.

J. Boyd, M. Butterworth and C. P. Tattersfield (Courtaulds Ltd). *Modern Textiles Mag. 36:*

52-56, 91, 93 (November, 1955).

Extensive experiments have been made on the application of rayon staple in blends with American cotton to fabrics used in industrial work clothing. Some accounts of the results have already been published. This paper gives further details of the production of the yarns and fabrics and the manner in which the serviceability trials and laboratory tests were carried out.

Blends of rayon-cotton for work clothing. Part 2.

J. Boyd, M. Butterworth and C. P. Tattersfield. *Modern Textiles Mag. 36:* 34-36, 58-63 (December, 1955).

Data from user and laboratory trials are presented.

Design in woven structure. Part 36. Entwining twill weaves.

D. C. Snowden. *Wool Rev. 27:* 20-21 (November, 1955).

How to design cord effects in fancy fabrics.

O. Hughes. *Textile Ind. 119:* 99-102 (December, 1955).

Dobby checks in terry towels.

T. Hargreaves. *Textile Mfr. 81:* 587-588 (November, 1955).

Construction details for three color check towels with overchecking effect.

Selecting fabrics for filtration use.

Textile Mfr. 81: 566-567 (November, 1955).

A general discussion.

Study of the control of permeability of nylon parachute cloth at high and low differential pressures.

H. J. Bickford, D. K. Kuehl and R. L. Rusk, Jr. Wright-Patterson Air Force Base, Ohio, Wright Air Development Center, 1955. 46 p. WADC Technical Report 54-468

Some of the difficulties encountered in making up ready-made rayon and Enkalon articles of clothing.

J. A. Kalkman. *Enka Breda Rayon Rev. (English ed.) 8:* 118-124 (November, 1955).

See *TTD 12:* 105 (March, 1955).

Identity thread machine.

Charnwood Engineering Co. Ltd. *Textile Merc. 133:* 955-956 (November 25, 1955).

The machine, which is designed to fasten a loop of colored thread through a garment or piece of cloth, can be used to identify articles after dyeing; to indicate seconds detected while the production process is going on; or to show the position of a defect in a piece of cloth. Photographs.

FINISHING AND CHEMICAL PROCESSING D

Processing of Ardil. Part 4. Finishing of Ardil fiber/cotton blended fabrics.

Textile Merc. 133: 807-809 (November 4, 1955).

CHEMICAL PROCESSES D 1

The control of ion concentrations in wool processing solutions. Part 1.

Textile Recorder 73: 65-67 (December, 1955).

Preparation, dyeing and finishing of low class woolens in Australia.

R. S. Mayston. *Textile J. of Australia 30:* 883-886 (September 20, 1955).

The development of the remanufactured woolen industry is discussed, and the scouring, milling, dyeing and finishing of these fabrics described, with particular reference to the conditions prevailing in Australia.

Handling blends of Dacron and cotton.

J. S. Rumsey. *Can. Textile J. 72, No. 15:* 41-44 (1955). Through *BCIRA 35:* 705 (1955).

The basic requirements (e.g. shrink- and wrinkle-resistance) for apparel fabrics are indicated and are then applied to Dacron/cotton fabrics. Aspects considered include control of pilling; desizing, scouring, and bleaching; union and cross-dyeing; finishing; cutting, sewing, and pressing.

The present state of development of antistatic preparations for chemical fibers.

H. Weigand. *Textil-Praxis 10, No. 8:* 810-813 (1955); *in German.* Through *BCIRA 35:* 702 (1955).

The suitability of various antistatic agents is examined, with special reference to synthetic fibers.

Measuring the whitening effects of fluorescent dyes and perborate bleaches on cotton.

M. S. Furry and P. L. Bensing (U. S. Agricultural Research Service). *Am. Dyestuff Reptr. 44:* P786-P790 (November 7, 1955).

A laboratory technique has been developed for measuring fluorescent and nonfluorescent whitening effects in fabrics. In a series of experiments,

by means of two different reflectometers, modified either to include or to exclude ultraviolet from the light source, measurements were made indicating the whiteness of undyed cotton test fabrics laundered repeatedly with different detergent solutions containing fluorescent dyes and perborate bleaches. Results showed that the whitening effects produced by the various washing treatments as evaluated by the two instruments were comparable and conformed well with visual observations. 7 references.

Optical brighteners in detergents.

A. E. Siegrist (Ciba Ltd). *Soap and Chemical Specialties 31:* 44-47, 179-181 (November, 1955); 58-61, 113 (December, 1955).

20 references.

Cotton crushproofing—theory, chemistry, application.

H. C. Borghetty and D. Fornelli. *Textile World 105:* 102-117 (December, 1955).

In this report, the authors give a brief background on crushproofing processing and explain how cotton fiber reacts to resin finishes, how crushproofing works on cotton, the types of chemicals used, and pointers on applying the finishes. 21 references.

Principles and practice of the flameproofing of textiles.

F. Ward (Courtaulds Ltd). *J. Soc. Dyers Colourists 71:* 569-578 (October, 1955).

A review. 40 references.

Electrostatic pile deposition.

Skinner's Silk and Rayon Record 29: 1172-1174 (November, 1955).

Flock printing machinery.

Milling: textural effect in relation to weaving firmness and finished firmness. Part 2.

S. Brierley. *Textile Mfr. 81:* 597-599 (November, 1955).

Nearly all the cover in milled cloths is obtained from the weft threads. A series of fabrics is studied.

Effect of mercerization on the properties of a crease-resistant cotton fabric.

AATCC. Rhode Island Section. *Am. Dyestuff Reptr. 44:* P779-P785, P790 (November 7, 1955).

The object of this project was to study the effect of varying degrees of mercerization on the crush resistance and other related properties of a typical cotton fabric (80 x 80) when resinated. Specimens taken from the fabric at various stages of processing were tested against the unresinated goods for crease resistance, abrasion resistance, tensile and tear strength. The degree of mercerization of the various specimens was also determined by the Barium method, fluidity tests, dyeing tests, and spectrophotometric charts. The results of the various trials are classified and summarized. 34 references.

Permanent protection of textiles against microbiological attack.

J. Salquain. *Teintex 20, No.* 8: 609-627 (1955); *in French.* Summary in *BCIRA 35:* 711 (1955).

A review. 49 references.

Non-woven fabrics bonded with rubber. Part 2. Continuous batt formation using one carding engine.

D. Wilson. *Textile Wkly. 55:* 1450-1451 (November 4, 1955).

Effect of additives to thermosetting resin baths on the physical properties of the treated fabric.

T. F. Garvey (Lowell Technological Institute). *Am. Dyestuff Reptr. 44:* P791-P794 (November 7, 1955).

A study was made of the changes in the physical properties of resin-treated fabrics resulting from the addition of elastomers, thermoplastic resins, thermosetting resins, repellents, and softeners, to a normal thermosetting-resin finishing bath. It was found that the physical properties were modified by the addition of these materials. Some of the agents studied markedly increased the tear strength, abrasion resistance, and wrinkle recovery of resin-treated fabrics. 5 references.

Rotproofing of viscose rayon. Part 1. Treatment of viscose rayon yarn with formaldehyde and formaldehyde-containing resins.

J. W. Bell, M. M. Ramsey and C. S. Whewell. *J. Soc. Dyers Colourists 71:* 660-667 (November, 1955).

The most outstanding result which emerged from the experiments was that halogenated phenoplasts are more efficient than either urea-formaldehyde or phenol-formaldehyde, and that a resin prepared from bromophenol and formaldehyde is exceedingly effective, a deposit of only 5% on the yarn being resistant to microorganisms under the most severe and prolonged test conditions. It also appears possible to improve the efficiency of urea-formaldehyde resin by incorporating a small proportion of halogenated resin. 15 references.

Use of silicones in the textile industry.

T. W. Watson. *J. Soc. Dyers Colourists 71:*

641-644 (November, 1955).

The chemistry of the production of silicones is outlined, and their main uses in the textile industry are discussed.

Dimensional stability of rayon fabrics as obtained by application of the Avcoset process.

K. Trutman. *Enka Breda Rayon Rev. (English ed.) 8:* 37-46 (November, 1955).

See *TTD 11:* 526 (December, 1954).

Maintaining nonionic concentration.

B. F. Davis, K. E. Wattman and H. C. Speel. *Soap and Chemical Specialties 31:* 73-79 (December, 1955).

A method for quantitative determination of nonionic surface active agents in aqueous solution is described. 8 references.

Cellulose acetate and water repellency.

R. J. Mann (British Celanese Ltd). *J. Soc. Dyers Colourists 71:* 579-587 (October, 1955).

The methods in use for making fabric water-repellent and the methods of measuring these properties are briefly reviewed. Experiments are described to determine the best available method for increasing the water-repellency of cellulose acetate, special attention being given to the silicones on account of their superior properties and comparative unfamiliarity. 10 references.

DYEING AND PRINTING D 2

The dyeing of viscose rayon.

A. Wehrung. *Textil-Rundschau 10, No. 7:* 359-364; *No. 8:* 428-432 (1955); *in German.* Through *BCIRA 35:* 706 (1955).

Various theories which explain the course of the dyeing process are reviewed, and reference is made to the viscose composition, streak effects and their causes, effect of fiber surface, shrinking of the fiber during spinning, direct processes, drying and dyeability. 29 references.

Macroscopic discontinuities in the dyeing of undrawn 66 nylon filament.

M. V. Forward and S. C. Simmens (British Nylon Spinners Ltd). *(Letter to the editor). J. Textile Inst. 46:* T671-T674 (October, 1955).

Dyeing of acetate rayon with disperse dyes. Part 4. Adsorption isotherms.

C. L. Bird and F. Manchester (Leeds University). *J. Soc. Dyers Colourists 71:* 604-609 (October, 1955).

19 references.

Dyeing astrakhan. Part 2.

Textile Merc. 133: 597-599 (September 30, 1955).

Dyeing and finishing of sweater and fine gauge jersey fabrics of type 42 Orlon. Part 2.

G. E. Woodside. *Can. Textile J. 72:* 57-58 (November 4, 1955).

Dyeing of wool with direct dyes.

AATCC. Philadelphia Section. *Am. Dyestuff Reptr. 44:* P806-P814 (November 21, 1955).

A comprehensive evaluation of direct dyestuffs for wool. The study covers light and wash fastness properties. A detailed examination of selected dyestuffs included exhaustion, rates of dyeing, pH, electrolytes and auxiliaries. Comparison with acid milling dyes for both fastness and economics was made. 8 references.

A new approach to the problem of dyeing textile fibers by replacing the metal or the oil bath with a fluidized solid bed made up of sand or glass beads.

V. B. Chipalkatti *(Letter to the editor). J. Sci. and Ind. Research (India) 14B:* 540-542 (October, 1955).

Adsorption of some organic vapors by wool and nylon.

H. R. Chipalkatti, V. B. Chipalkatti and C. H. Giles. *J. Soc. Dyers Colourists 71:* 652-660 (November, 1955).

This paper describes part of an exploratory investigation into the adsorption of some organic vapors by nylon and wool, made to discover whether the technique can be used, (a) to determine the importance of hydrogen bonding in adsorption of organic compounds by such fibers; (b) to study the properties of the fibers at high temperatures; (c) to study the physical state of dyes in the fibers; and (d) to study vapor-phase dyeing techniques at high temperatures. 31 references.

Rate of dyeing.

J. H. Skinkle (Lowell Technological Institute). *Textile Research J. 25:* 861-865 (October, 1955).

Studies in the naphthalene series. Part 18. Preparation of aroyl-1-naphthols and the use of acyl and aroyl-1-naphthols as coupling components. Part 19. Preparation and use of the hydroxy ketones of β-naphthol as coupling components. Part 20. Preparation and use of arylamides of Schaeffer's acid as coupling components.

R. D. Desai and R. M. Desai. *J. Sci. and Ind. Research (India) 14B:* 498-512 (October, 1955).

Alcian X dyestuffs in textile printing.

W. Clarke. *Can. Textile J. 72:* 57-62 (October 7, 1955).

The chemistry of Alcian Blue 8G, the first Alcian dyestuff, is reviewed and methods of application of earlier brands are surveyed. Properties and methods of other members of this series are described, together with the probable mechanism involved.

Chemistry of esters of leuco vat dyes. Part 1.

S. Ainsworth and A. Johnson (University of Manchester). *J. Soc. Dyers Colourists 71:* 592-604 (October, 1955).

The results reported in this paper represent an initial survey of part of the chemistry of esters of leuco vat dyes. They show that these esters do not react in a simple way and may react differently with different oxidizing agents. The types of reaction which may occur with hydrogen peroxide are indicated but have not been proved conclusively. 19 references.

Colored discharge technique.

G. Bertolina, A. Broggi and A. Scarpella. *Dyer 114:* 775-779 (November 11, 1955).

Printing acetate, acetate/viscose and nylon using selected disperse acetate dyes, direct dyes and thiourea dioxide. 9 references.

Printing of wool, including the Melange or Vigoureux printing of other staple fibers.

J. A. Potter (Clayton Dyestuffs Company Ltd). *J. Soc. Dyers Colourists 71:* 645-652 (November, 1955).

The principles of textile printing are outlined, as a background to a discussion of the preparation and the composition of printing pastes for application to wool cloth and the selection of dyes for this purpose. The technique of printing wool in the manner originated by Vigoureux is also described, and the selection of dyes and the composition of the printing pastes are discussed. The extension of this technique to recently developed synthetic fibers and to fiber mixtures is considered.

Roller printing spun rayons.

Modern Textiles Mag. 36: 46, 94 (November, 1955); 49, 86 (December, 1955).

DRYING D 4

Heat-setting of nylon fabrics.

N. B. Furvik, A. Bernskiold and N. Gralen (Swedish Institute for Textile Research). *J. Textile Inst. 46:* T662-T667 (October, 1955).

A method of measuring the degree of setting in nylon fabrics by measuring the creasing angle of the wet fabric after creasing in water is described. A water temperature of 60°C was found to be the most suitable. The effect of various setting treatments was measured by this method. Dry heat-setting and steam-setting were compared as well as the effect of setting time and temperature. An equation describing the relationship between degree of setting and setting time was found. The relationship between degree of set, setting time and temperature is also briefly discussed.

Productivity increase in the textile industry by using steam nozzle drying.

H. Jorder. *Textil-Rundschau 10, No. 8:* 418-423 (1955); *in German.* Through *BCIRA 35:* 712 (1955).

The advantages of nozzle drying are reviewed and the increasing importance of using superheated steam during dyeing and heat-treatment of textiles is pointed out.

Stabilization of structures made from polyester fibers.

D. N. Marvin and P. W. Carlene. *Ann. Sci. Textiles Belges. No. 3:* 134-167 (September, 1955); *in English.*

The stabilization of Terylene filament yarn and staple fiber structures is reviewed. The effect of such stabilization processes on fiber and structure properties is considered in relation to the end use requirements.

TESTING AND MEASUREMENT E

Microtechnical methods in the textile laboratory.

S. M. Charlett. *Textile Recorder 73:* 68-71 (December, 1955).

A review of some techniques for the separation of fibers in mixtures and for the investigation of adulteration and damage. 11 references.

Statistical principles of testing.

J. Mandel. *Ind. Quality Control 12:* 18-21 (November, 1955).

The answer to many problems in science, both fundamental and applied, is found in small differences in the numerical values of a few measurements. In determining these differences, it is necessary to guard against biases introduced by the

testing procedure. One of the principal functions of statistical design is to detect and neutralize these biases. The examples briefly describe this approach. 4 references.

FIBERS E 1

Stress relaxation of fibers as a means of interpreting physical and chemical structure. Part 1. Determination of the relative accessibility of fibers.

T. Lemiszka and J. C. Whitwell (Textile Research Institute). *Textile Research J. 25:* 947-955 (November, 1955).

50 references.

Phase contrast microscopy.

H. de Vries. *Enka Breda Rayon Rev. (English ed.) 8:* 53-67 (November, 1955).

See *TTD 11:* 533 (December, 1954).

Breaking of single cotton fibers under various conditions.

R. L. Pearson, A. G. Funk and H. Eyring. *Textile Research J. 25:* 961-963 (November, 1955).

Values for percentage elongation at break and average force at break of single cotton fibers immersed in water at various temperatures and in various concentrations of NaOH have been determined by statistical methods. A maximum value of average force in 1 *M* NaOH is explained by a cooperative effect of the fibrils. 14 references.

Relation of single-fiber to flat-bundle strength and elongation of cotton.

R. S. Orr, L. C. Weiss and J. N. Grant (Southern Regional Research Laboratory). *Textile Research J. 25:* 939-946 (November, 1955).

Seven cotton and one rayon samples were tested at various gage lengths, using the Stelometer. A method of estimating the slip length of fibers in a flat-bundle test is derived and applied to these data in order to obtain a corrected gage length for use in calculating strain at break. Also, a method similar to that proposed by Platt for calculating the maximum possible bundle tenacity from breaking load and elongation at break of single cotton fibers is applied to previous single-fiber tensile data. The resulting derived values of bundle tenacity and per cent elongation are compared with measurements made on fiber bundles at equivalent gage lengths. The flat-bundle values of tenacity and elongation, measured with the Stelometer, show a good correlation with the values measured on single fibers. 19 references.

Instrument for the rapid estimation of cross-sections of single wool fibers.

G. E. Settle (Wool Industries Research Assoc.). *J. Textile Inst. 46:* T633-T640 (October, 1955).

An instrument is described for quickly estimating the diameter or cross-section of single fibers. Air is drawn at constant pressure through an open slot along which the fiber is mounted and the diameter of the fiber is read off directly from a flowmeter. 6 references.

Relative humidity correction to the results of determinations of the diameter of wool fibers by the air-flow method.

S. L. Anderson (Wool Industries Research Assoc.). *(Letter to the editor). J. Textile Inst. 46:* T675-T676 (October, 1955).

Qualitative determination of synthetic fibers.

S. Schwenkedel. *Textil-Praxis 10, No. 9:* 918-920 (1955); *in German.* Through *BCIRA 35:* 745 (1955).

The qualitative methods given for distinguishing between polyvinyl chloride, polyamide, polyester and polyacrylonitrile fibers comprise: (1) chemical testing methods (by means of various reagents and solvents, staining methods, dry distillation, and the burning test), (2) separation by means of solvents, (3) microscopical examination, and (4) special reactions. 14 references.

YARNS E 2

Electronic control of the regain of a running rayon thread.

V. E. Gonsalves. *Enka Breda Rayon Rev. (English ed.) 8:* 28-36 (November, 1955).

See *TTD 12:* 75 (February, 1955).

New method for check-over and gauging of Scott inclined plane testers.

J. W. Y. Heijnis. *Enka Breda Rayon Rev. (English ed.) 8:* 94-104 (November, 1955).

See *TTD 11:* 262 (June, 1954).

Testing yarns for evenness of shrinkage.

J. Lako. *Enka Breda Rayon Rev. (English ed.) 8:* 111-115 (November, 1955).

See *TTD 11:* 336 (August, 1954).

Electronic nep detector for filament yarn.

B. J. van Dongeren. *Enka Breda Rayon Rev. (English ed.) 8:* 105-110 (November, 1955).

See *TTD 11:* 262 (June, 1954).

Estimation of bone-dry strength and strain values of rayon tire cord.

A. van Gijzen. *Enka Breda Rayon Rev. (English ed.) 8:* 78-81 (November, 1955).

See *TTD 11:* 336 (August, 1954).

Analysis of the cross-sections of synthetic yarns.

W. Burkhart and E. Felix (Zellweger (Uster) Ltd). *Fibres 16:* 380-385 (November, 1955).

The Uster Spectrograph is a useful new auxiliary instrument for working in conjunction with the Uster evenness tester. It delivers a diagram in which the length of the periodic variations in function of the wave-length are given as a wavelength spectrum. There is a close relationship between the periodic cross-section variations and the appearance of the finished fabric.

An accurate balance for weighing the yarn count of slivers, rovings and yarns according to the Tex system.

J. Blokland Visser and A. la Fleur. *Enka Breda Rayon Rev. (English ed.) 8:* 48-52 (November, 1955).

See *TTD 12:* 74 (February, 1955).

FABRICS E 3

Investigation into some methods for the assessment of the weathering fastness of dyed textiles.

E. Butterworth and J. C. Guthrie (Courtaulds Ltd). *J. Soc. Dyers Colourists 71:* 587-592 (October, 1955).

Dyed textiles are, in general, less resistant to color change when weathered than when exposed behind glass to daylight. No standard method exists for the assessment of weathering fastness. An outdoor weathering test and a wet fading lamp test are described, and their merits and deficiencies discussed. The method of assessment allows direct comparison between the weathering (or wet-fading-lamp) fastness of a pattern and the light fastness according to B.S. 1006. These methods have yielded useful results in practice, and this paper records some work carried out to date. 10 references.

Processing of Ardil. Part 5. The quantitative analysis of Ardil fiber/viscose and Ardil fiber/cotton blends.

Textile Merc. 113: 852 (November 11, 1955).

A soil-infection method for the testing of textiles for resistance to microbiological attack.

A. O. Lloyd (Catomance Ltd). *J. Textile Inst. 46:* T653-T661 (October, 1955).

A testing technique is described in detail. Strips of textile, partially coated with a soil/compost suspension, thickened to a paste with kieselguhr, are incubated while suspended over water. By the use of asbestos plugs of standard size and weight, holding a standard amount of water, moisture conditions within the strips are graduated from complete saturation to mere dampness. Mould-resistance and rot-resistance are determined simultaneously. Photographs are presented illustrating the technique and some of the results obtained. 6 references.

Study of the soiling of natural and manufactured fibers from aqueous systems.

AATCC. New York Section. *Am. Dyestuff Reptr. 44:* P815-P826 (November 21, 1955).

Fifteen natural- and manufactured-fiber fabrics were soiled with two representative soils, which were applied by padding, spraying and immersing techniques. These soiled fabrics were washed using four different standard methods employing the Terg-O-Tometer and Launder-Ometer. The results were evaluated by reflectance measurements. The experimental results indicated that soiling and washing under standard conditions can be used to forecast the soiling characteristics of the fabrics under normal end-use conditions. 25 references.

INDUSTRIAL ENGINEERING F

How four factors affect Ashcroft interference tables.

T. F. O'Connor. *Textile World 105:* 134-136, 198-200 (December, 1955).

Four complications of the Ashcroft system of allowing for interference are discussed: distribution, rating, allowances, and internal work.

MACHINERY AND MAINTENANCE F 1

Automatic control. Parts 1 and 2.

C. G. Booy. *Enka Breda Rayon Rev. (English ed.) 8:* 82-93 (November, 1955).

See *TTD 11:* 338 (August, 1954) and *TTD 12:* 79 (February, 1955).

Use of compressed air in textile processes. Part 1.

F. H. Slade. *Textile Mfr. 81:* 530-533 (October, 1955).

Compressed air in textile processing. Part 2.

F. H. Slade. *Textile Mfr. 81:* 451-456 (September, 1955).

New handling and hoisting techniques, cleaning operations, wool oiling, and cut-marking of weaver's beams at the slasher sizer are included.

QUALITY CONTROL F 3

Quality control in paper finishing.

E. R. Hoffman. *Ind. Quality Control 12:* 7-10, 18 (November, 1955).

Methods are shown to improve and control the perfection of manually counted and sorted paper. 9 references.

SCIENCES G

CHEMISTRY G 1

Chain length and chain-length distribution of untreated cotton, flax, and ramie celluloses.

T. E. Timell (McGill University). *Ind. Eng. Chem. 47:* 2166-2172 (October, 1955).

In a study of chain length and chain-length distribution of untreated cotton, flax, and ramie celluloses, after conversion to the nitrates, the degree of polymerization was determined viscometrically with corrections for the influence of rate of shear and degree of substitution on intrinsic viscosities: ramie about 5750, cotton 4700, flax 4650. Fractionations were carried out by precipitation with acetone-water as the solvent-nonsolvent system. Instability of the nitrates prohibited prolonged refractionation. Failure to account for the shear rate effect resulted in narrower chain-length distributions than indicated. Frequency distributions contained only one peak. The ramie peak was almost symmetrical, with most of the material within a range of 4500 to 6000 D. P. 37 references.

Effect of swelling and supermolecular structure on reaction of cellulose with nitrogen dioxide.

W. E. Roseveare and D. W. Spaulding (E. I. du Pont de Nemours and Co., Inc.). *Ind. Eng. Chem. 47:* 2172-2175 (October, 1955).

Oxycellulose formation is important in production of rayon, bleaching of cotton and rayon, and manufacture of detergents. Little information is available on effect of structure and swelling on oxidation of cellulose. Dilute solutions of nitrogen dioxide react preferentially with the more accessible amorphous regions, but above a certain concentration the crystallites are penetrated by the nitrogen dioxide, so that the crystalline and amorphous cellulose react equally fast. A higher concentration is required for penetration of the crystallites of cotton than those of rayon. The moisture regain and stress-strain properties of the oxycellulose depend on the relative amount of amorphous and crystalline material reacting. This information helps predict conditions of oxidation required to produce oxycellulose of particular properties. 8 references.

Study of the alcoholysis of cellulose.

R. B. Valley (Institute of Paper Chemistry). *Textile Research J. 25:* 930-939 (November, 1955).

A study was made of the alcoholysis of cotton linters using methanol, *n*-butanol, *n*-hexanol, and *n*-octanol acidified with hydrogen chloride. 22 references.

Practical textile chemistry: with special reference to the structure, properties and processing of wool.

J. W. Bell. London: National Trade Press, 1955. 259 p.

Soiling of carpets.

Z. Sudnik *(Letter to the editor). J. Textile Inst. 46:* T668-T670 (October, 1955).

BIOLOGY G 3

Shell effects in chemoprotein fibers on photomicrographs.

S. Wolf. *Faserforsch. u. Textiltech. 6, No. 8:* 357-364 (1955); *in German.* Through *BCIRA 35:* 745 (1955).

Photomicrographs are given to show some remarkable decomposition and dissolution phenomena in modified protein fibers, brought about by proteolytic enzymes, insects or chemical treatments. Under certain conditions, the fiber nucleus is completely destroyed and the protective outer shell is seen in the form of a hollow tube. Comparison is made with similar processes in keratin fibers. 28 references.

MISCELLANY H

A scientist in industry.

F. P. Slater. *Textile Recorder 72:* 73-75 (April, 1955); *73:* 81-83 (May, 1955); 84-86 (June, 1955); 66-67 (September, 1955). Through *BCIRA 35:* 725 (1955).

In this series of articles the author describes his early experiences in founding a physics section in a textile (spinning) firm's experimental department. He deals with the attitude of practical men to the project, some of his successes and failures in the field of human relations, technical problems studied, and the development of ideas through small-scale research to full-scale production. The relationship between the research department and the company's board of directors is discussed with personal anecdotes.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

Col. 25

FIBERS A

NATURAL FIBERS A 1

Degumming method for treating bast fiber webs.

A. F. Burkardt and E. H. Boeglin (to Sativa Corporation). USP 2 726, 921, December 13, 1955.

YARN PRODUCTION B

Cutting filaments into staple fiber.

A. Maurer. Soc. anon. BP 729 794, May 11, 1955. Through *BCIRA 35:* 730 (1955).

CARDING AND COMBING B 2

Condenser card for wool or cotton waste.

C. O. Muellenschlaeder (Germany). BP 729 128, May 4, 1955. Through *BCIRA 35:* 732 (1955).

Attachment for multiple tape condensers.

A. Poirier. USP 2 726 422, December 13, 1955.

DRAWING AND ROVING B 3

Roller weighting mechanism for drafting systems having three or more lines of rollers.

J. Noguera (to Casablancas High Draft Co. Ltd). BP 729 084, May 4, 1955. Through *BCIRA 35:* 734 (1955).

Fiber strand feeding method dispensing with the weighted rollers of the drafting head.

Schiess AG (Switzerland). BP 729 203, May 4, 1955. Through *BCIRA 35:* 733 (1955).

Drafting heads.

Schiess AG (Germany). BP 729 253, May 4, 1955. Through *BCIRA 35:* 733 (1955).

Col. 26

Method of drafting a sliver.

G. F. Raper. BP 729 631, May 11, 1955. Through *BCIRA 35:* 733 (1955).

Wide-pitch helix of wire between pairs of drafting rollers to control the run of the sliver or roving.

K. Ward (to Fairbairn Lawson Combe Barbour Co. Ltd). BP 729 768, May 11, 1955. Through *BCIRA 35:* 733 (1955).

Drafting roller having a hard core and a sleeve of flexible material.

G. Fusaroli (to Sampre S. A. Meccanica Precisione). BP 729 975, May 11, 1955. Through *BCIRA 35:* 733 (1955).

Roll control mechanism.

H. W. Groce (to Cocker Machine and Foundry Co.). USP 2 723 441, November 15, 1955.

Clearer for drawing rolls.

J. Noguera (to Casablancas High Draft Co. Ltd.). USP 2 724 149, November 22, 1955.

SPINNING, WINDING, TWISTING B 4

Spindle mechanisms of the worm and worm wheel drive type.

Hispano Suiza (Suisse) S.A. BP 728 813, April 27, 1955. Through *BCIRA 35:* 701 (1955).

Traverse mechanisms for up-twisters.

E. Findlow (to Ernest Scragg and Sons Ltd). BP 729 061, May 4, 1955. Through *BCIRA 35:* 734 (1955).

Braking mechanism for winding spindles.

E. Findlow (to Ernest Scragg and Sons Ltd). BP 729 235, May 4, 1955. Through *BCIRA 35:* 734 (1955).

Dead blade spindle.

J. R. Foster (to T.M.M. (Research) Ltd). BP

729 524, May 4, 1955. Through *BCIRA 35:* 734 (1955).

Process and device for twisting threads or filaments.

Pag Patentgesellschaft AG (Switzerland). BP 729 547, May 11, 1955. Through *BCIRA 35:* 734 (1955).

Double-twist spindles.

N. V. Onderzoekingsinstituut Research (Netherlands). BP 729 578, May 11, 1955. Through *BCIRA 35:* 735 (1955).

Waste thread collecting attachment for quiller.

R. C. Byers. USP 2 721 039, October 18, 1955.

Plastic spinning cone.

Z. N. Meretey (to PM Industries, Inc.). USP 2 721 043, October 18, 1955.

Winding apparatus.

P. J. Corbiere and P. Froger (to Societe Rhodiaceta). USP 2 723 440, November 15, 1955.

Skein yarn unwinding means.

R. V. Vanderspek and L. A. Zeller (to Textile Machine Corporation). USP 2 723 809, November 15, 1955.

Spinning mules.

N. H. Chamberlain and B. E. King (to T.M.M. (Research) Ltd.). USP 2 724 231, November, 22, 1955.

Device for exhausting broken threads in spinning machines.

J. Furstenberg (to Pneumafil Corporation). USP 2 724 943, November 29, 1955.

Creel.

E. J. McBride. USP 2 725 202, November 29, 1955.

Spinning mules.

N. H. Chamberlain and B. E. King (to T.M.M. (Research) Ltd.). USP 2 725 709, December 6, 1955.

Photoelectric winding machine stopping system.

R. D. Heffelfinger (to American Viscose Corporation). USP 2 725 710, December 6, 1955.

Twisting spindle balloon control.

A. W. Vibber. USP 2 725 711, December 6, 1955.

Traveler-ring holder assembly.

E. H. Rooney. USP 2 725 712, December 6, 1955.

Apparatus for cabling yarn.

G. R. Bethune, Jr. and H. A. Green (to The Goodyear Tire and Rubber Co.). USP 2 726 505, December 13, 1955.

Twisting spindle balloon control.

A. W. Vibber. USP 2 726 506, December 13, 1955.

FABRIC PRODUCTION C

Apparatus for making continuous tubular piece goods.

J. A. Cloutier (to Pepperell Manufacturing Co.). USP 2 726 611, December 13, 1955.

Creel.

A. J. Ammerall (to Mohawk Carpet Mills, Inc.). USP 2 726 827, December 13, 1955.

WARPING, SLASHING, YARN PRODUCTION C 1

Beams.

F. S. Hodgson. BP 727 248, March 30, 1955. Through *BCIRA 35:* 629 (1955).

Wire, rope, or yarn packages and method and machine for winding them.

W. P. Taylor and J. V. H. Whipple. BP 727 290-291, March 30, 1955. Through *BCIRA 35:* 629 (1955).

Photo-electric and electronic amplifying means for reproducing with considerable mechanical power the movement of a patch of light (shining through a slot) as it moves along a fixed line.

R. Gibson and G. H. Thorndike (to Wool Industries Research Assoc.). BP 727 403, March 30, 1955. Through *BCIRA 35:* 627 (1955).

Yarn beam.

L. Stanworth (to Thomas Ashworth and Co. Ltd). BP 727 992, April 13, 1955. Through *BCIRA 35:* 671 (1955).

Quick-traverse winding frame with automatic knot tying and bobbin changing devices.

W. Reiners (Germany). BP 727 998, April 13, 1955. Through *BCIRA 35:* 671 (1955).

Winding continuous filaments.

G. W. Tudor (to British Nylon Spinners Ltd).

BP 728 529, April 20, 1955. Through *BCIRA 35:* 704 (1955).

Means for pressing and locking together the flanges, barrel and hub tube of a bobbin.

J. W. Berry (to Birmingham Aluminium Casting Co. Ltd). BP 729 535, May 4, 1955. Through *BCIRA 35:* 736 (1955).

Yarn guides.

W. Dietz (Germany). BP 729 702, May 11, 1955. Through *BCIRA 35:* 736 (1955).

Beam warping apparatus.

J. M. Dickson (to Celanese Corporation of America). USP 2 724 170, November 22, 1955.

Non-woven fabric of layers of longitudinal and transverse threads bonded together.

G. E. Chadwick, G. E. Collins and W. J. Roff (to The British Cotton Industry Research Association). USP 2 725 323, November 29, 1955.

Warp beaming apparatus.

E. K. Bauer (to American Viscose Corporation). USP 2 725 613, December 6, 1955.

WEAVING C 2

Loom stop motion.

J. Lachapelle (to Drummondville Cotton Co. Ltd). BP 728 359, April 20, 1955. Through *BCIRA 35:* 705 (1955).

Braiding machines.

C. B. Jardine (Australia). BP 728 560, April 20, 1955. Through *BCIRA 35:* 705 (1955).

Weaving of narrow fabrics.

W. Genders (to E. B. Hamel and Son Ltd). BP 729 779, May 11, 1955. Through *BCIRA 35:* 737 (1955).

Method of weaving a pile fabric.

H. J. Smiley (to James Lees and Sons Co.). USP 2 715 917, August 23, 1955.

Control for weft replenishing loom.

P. A. Nims (to Crompton and Knowles Loom Works). USP 2 720 895, October 18, 1955.

Method of weaving using a stretchable weft thread.

S. S. C. Fleischer and C. C. Thomsen. USP 2 723 683, November 15, 1955.

Self-threading shuttles.

W. J. Gosselin (to US Bobbin and Shuttle Co.). USP 2 723 684, November 15, 1955.

Weft detector for pick and pick loom.

P. A. Nims (to Crompton and Knowles Loom Works). USP 2 723 685, November 15, 1955.

Safety conveyor drive.

N. P. Darash (to The Warner and Swasey Co.). USP 2 723 686, November 15, 1955.

Warp stop motion.

W. Croteau (to Draper Corporation). USP 2 723 687, November 15, 1955.

Warp threads shedding operation device combined with the weft threads carrying device for circular weaving looms.

G. Casati and C. Cazzaniga (Italy). USP 2 724 413, November 22, 1955.

Loom and method of operation.

J. L. Ramer and C. G. Molander (to The Orr Felt and Blanket Co.). USP 2 724 414, November 22, 1955.

Circular looms.

J. Catry and R. N. Low (to Fairwest (U. K.) Ltd.). USP 2 725 080, November 29, 1955.

Weft beating up rotating reed device for circular weaving looms.

G. Casati and C. Cazzaniga (Italy). USP 2 725 899, December 6, 1955.

Hand loom having drum controlled heddles.

W. P. Leuszler. USP 2 725 900, December 6, 1955.

Circular looms.

R. N. Low and J. Catry (to Fairwest (U. K.) Ltd.). USP 2 726 684, December 13, 1955.

Weft thread feed device.

E. Pfarrwaller (to Sulzer Freres, Soc. Anon.). USP 2 726 685, December 13, 1955.

KNITTING C 3

Knitted non-run fabric and stocking.

F. Stevenson (to Howard Hosiery Mills, Inc.). USP 2 720 767, October 18, 1955.

Preventing soiling of knitted fabrics during knitting.

S. G. Chiodine and J. B. Lawson (to Lawson Products, Inc.). USP 2 723 543, November 15, 1955.

Method of circular intarsia knitting.
E. Overfield-Collins and A. P. Saunders (to Wildt and Co. Ltd.). USP 2 723 544, November 15, 1955.

Yarn supplying and changing mechanism for knitting machines.
G. D. Stibbe and A. M. Brown (to G. Stibbe and Co. Ltd.). USP 2 723 545, November, 15, 1955.

Fabric manipulation in circular knitting.
J. C. Buckreus (to Bear Brand Hosiery Co.). USP 2 723 546, November 15, 1955.

Nottingham elastic lace net.
A. C. Wheatcroft (to North American Lace Co.). USP 2 723 586-588, November 15, 1955.

Lubricating knitting machines.
L. A. Oberly (to Industrial Rayon Corporation). USP 2 725 734, December 6, 1955.

Double-faced knitted pile fabric.
D. P. Moore. USP 2 725 735, December 6, 1955.

Warp knitted fabric.
A. F. Netscher and H. N. Fraenkel (to N. V. Maatschappij). USP 2 725 736, December 6, 1955.

Circular knitting machine apparatus for knitting designs in tubular fabrics.
S. J. Haddad (to Standard Hosiery Mills). USP 2 726 525, December 13, 1955.

FABRICS C 4

Mats of fibers of thermoplastic materials, particularly glass.
Soc. anon. des Manufactures des Glaces (France). BP 729 210, May 4, 1955. Through *BCIRA 35:* 731 (1955).

Process for the manufacture of porous, air-permeable flexible sheet material.
C. L. Nottebohm (to Pellon Corp.). USP 2 719 806, October 4, 1955.

Nonwoven resin-bonded fabric from yarns.
L. A. Runton and E. H. Shattuck (to Alexander Smith, Inc.). USP 2 725 090, November 29, 1955.

Stuffer warp ribbon for pile fabric.
B. M. Kimball (to The Cellucord Corporation). USP 2 725 980, December 6, 1955.

Apparatus for forming nonwoven fiber webs.
K. J. Harwood, C. H. Hogue, H. J. Le Dain and R. N. Sabee (to Kimberly-Clark Corporation). USP 2 726 423, December 13, 1955.

FINISHING AND CHEMICAL PROCESSING D

CHEMICAL PROCESSES D 1

Creaseproofing rayon fabrics with resinous condensation products to overcome loss of resistance to abrasion.
R. A. Blease, A. Crook and J. T. Marsh (to Tootal Broadhurst Lee Co. Ltd). BP 728 440, April 20, 1955. Through *BCIRA 35:* 714 (1955).

Apparatus for applying a liquid to a running yarn.
E. Stone and E. J. Sparke (to British Enka Ltd). BP 728 745, April 27, 1955. Through *BCIRA 35:* 704 (1955).

Fabrics composed of adhesively-bonded fibers.
C. L. Nottebohm (to Carl Freudenberg KG). BP 728 865, April 27, 1955. Through *BCIRA 35:* 714 (1955).

Chlorite bleaching of cellulosic material.
W. A. S. White and N. F. Crowder (to Imperial Chemical Industries Ltd). BP 729 749, May 11, 1955. Through *BCIRA 35:* 740 (1955)

Continuous method for saturating felt.
B. S. Penley (to Allied Chemical and Dye Corporation). USP 2 721 144, October 18, 1955.

Shrinkproofing treatment of wool-containing materials.
H. W. Mackinney (to Union Carbide and Carbon Corporation). USP 2 723 924, November 15, 1955.

Cyanoethylated cellulose textiles modified with chromic and periodic acids.
H. Weisberg (to Londat Aetz Fabric Co.). USP 2 724 632, November 22, 1955.

Process of making cellulose fibers containing ether groups and beta-propiolactone substituents.

G. C. Daul, R. M. Reinhardt and J. D. Reid (to United States of America). USP 2 724 633, November 22, 1955.

Creaseproofing treatment of textiles with acetylene diurea derivatives.

D. M. Gagarine and H. Repokis (to Dan River Mills, Inc.). USP 2 724 664, November 22, 1955.

Apparatus for washing loose wool.

W. W. Spooner (England). USP 2 724 955, November 29, 1955.

Process and apparatus for treating threads in tubes.

E. J. Griset, Jr. (to American Enka Corporation). USP 2 725 276, November 29, 1955.

Process and apparatus for treating threads in tubes.

H. P. Rilling and C. F. Nichols (to American Enka Corporation). USP 2 725 277, November 29, 1955.

A water-insoluble resinous finishing of cellulosic textiles.

R. F. Nickerson (to Monsanto Chemical Co.). USP 2 725 308, November 29, 1955.

Coated non-woven fabric.

E. A. Rodman (to E. I. du Pont de Nemours and Co.). USP 2 725 309, November 29, 1955.

Flameproofing cellulosic materials.

D. L. Kenaga and A. J. Erbel (to The Dow Chemical Co.). USP 2 725 311, November 29, 1955.

Twisting, dyeing, and heat-setting multifilament polyamidic and polyester yarns.

G. W. Brooks (to Belmont Throwing Co.). USP 2 725 714, December 6, 1955.

Process for modifying the dyeing properties of proteinic fibers.

H. Helfenberger and W. Hagenbuch (to Sandoz AG). USP 2 726 133, December 6, 1955.

Bead tray method for yarn purification.

E. M. Hicks, Jr. (to E. I. du Pont de Nemours and Co.). USP 2 726 134, December 6, 1955.

DYEING AND PRINTING D 2

Pigment prints fast to rubbing and washing.

Farbenfabriken Bayer AG (Germany). BP 729 122, May 4, 1955. Through *BCIRA 35:* 741 (1955).

Process for fixing dyes in a continuous dyeing process.

Etablissements Schaeffer et Cie (France). BP 729 353, May 4, 1955. Through *BCIRA 35:* 741 (1955).

Process for improving the fastness of dyes and pigments.

J. G. Evans, J. H. Leach and G. Landells (to Bradford Dyers' Assoc. Ltd). BP 729 643 and BP 729 656, May 11, 1955. Through *BCIRA 35:* 741 (1955).

Dyeing apparatus for continuously moving a length of fabric between rollers.

A. Zanger. USP 2 724 254, November 22, 1955.

MECHANICAL PROCESSES D 3

Fixing fabric webs with advance feed on to the pins of tenter frames with pin rack chains.

A. Meier-Windhorst and B. Hanss (Germany). USP 2 723 438, November 15, 1955.

Combined tenter clamp and needle chain.

H. A. Buysch and R. Bochmann (to H. Krantz Sohne). USP 2 724 888, November 29, 1955.

TESTING AND MEASUREMENT E

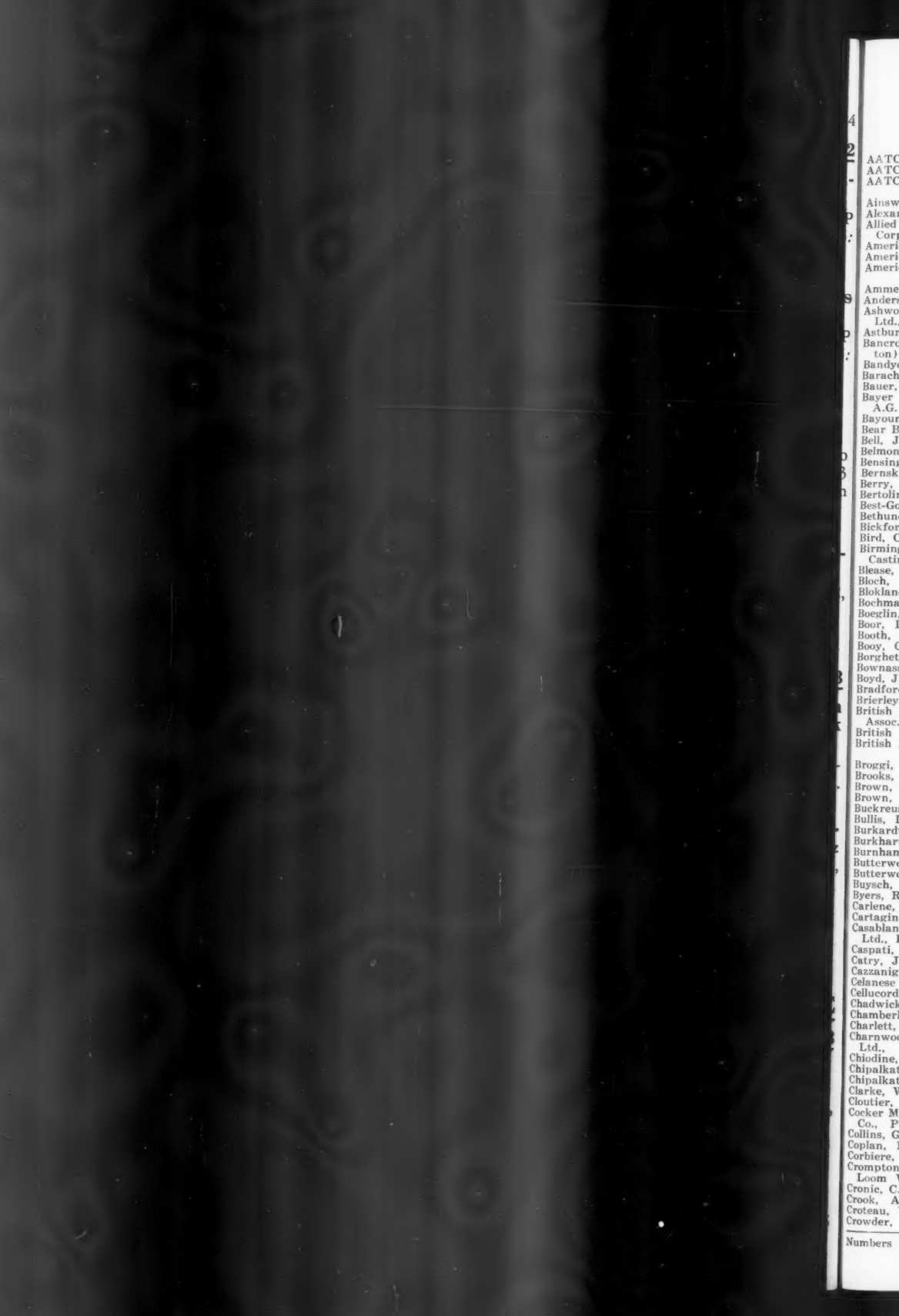
FABRICS E 3

Apparatus for determining the fitting characteristics of an item of hosiery.

G. M. Jones, Sr. USP 2 706 402, April 19, 1955.

Tear testing apparatus and method.

L. Boor. USP 2 706 909, April 26, 1955.



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